



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,271	03/17/2004	Katsufumi Ohmuro	2803.70099	4200
7590	12/13/2005			
Patrick G. Burns, Esq. GREER, BURNS & CRAIN, LTD. Suite 2500 300 South Wacker Dr. Chicago, IL 60606			EXAMINER DUONG, TAI V	
			ART UNIT 2871	PAPER NUMBER
DATE MAILED: 12/13/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

H-2

Office Action Summary

Application No.

10/802,271

Applicant(s)

OHMURO ET AL.

Examiner

Tai Duong

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2005.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-21 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 9-17, 20 and 21 is/are rejected.
 7) ☒ Claim(s) 18 and 19 is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 07/14/04.
 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) ☐ Notice of Informal Patent Application (PTO-152)
 6) ☐ Other: _____.

Applicant's election without traverse of Species B (claims 9-21) in the reply filed on 11/30/05 is acknowledged.

In view of the papers filed 11/30/05, the inventorship in this nonprovisional application has been changed by the deletion of Katsufumi Ohmuro.

The application will be forwarded to the Office of Initial Patent Examination (OIPE) for issuance of a corrected filing receipt, and correction of Office records to reflect the inventorship as corrected.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 9-13, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakamoto et al (Pub. No. US 2002/0118326).

Note Figs. 3, 4A-B, 5A-B, 6, 9 and 11A-B which identically disclose the claimed liquid crystal display device comprising a transparent electrode 78; a reflecting plate 70 having wrinkle-like unevenness on the surface thereof; and a liquid crystal layer 54 provided between the transparent electrode and the reflecting plate, wherein at least part of the wrinkle-like unevenness 94 has a first linear part extending in a first part, a second linear part extending from the top end of the first linear part in a second direction different from the first direction by certain angles to a predetermined side, and a third linear part extending from the top end of the second linear part in a direction which different from the second direction by certain angles to the predetermined side

(corresponding to the three sides of the mesh-like projections 94), and a structure 66 provided beneath the reflecting plate and having unevenness, wherein the wrinkle-like unevenness of the reflecting plate is almost in accordance with the unevenness of the structure. . See discussions of the recited features in paragraphs 0038-0058 and 0062.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al (Pub. No. US 2002/0118326).

The only difference the LCD device of Sakamoto et al and that of the instant claim is Sakamoto et al are silent about the difference between the first direction and the second direction and the difference between the second direction and the third direction being equal to or less than 45°. Thus, it would have been obvious to a person of ordinary skill in the art to have the difference between the first direction and the second direction and the difference between the second direction and the third direction being equal to or less than 45° for the ease of fabrication of the structure provided beneath the reflecting plate and having unevenness.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al (Pub. No. US 2002/0118326) in view of Sugiura et al (Pub. No. US 2004/0145689).

The only difference the LCD device of Sakamoto et al and that of the instant claim is the average tilting angle of the wrinkle-like unevenness being 5° to 15° . Sugiura et al disclose in Fig. 27 that it was known to employ the average tilting angle of the wrinkle-like unevenness being 5° to 15° (paragraph 0166). Thus, it would have been obvious to a person of ordinary skill in the art in view of Sugiura et al to employ the average tilting angle of the wrinkle-like unevenness being 5° to 15° in Sakamoto et al for obtaining high reflectance.

Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al (Pub. No. US 2002/0118326) in view of Applicant's Prior Art Disclosure (APAD).

APAD discloses that it was known to employ a vertically aligned type using n-type liquid crystal and the reflecting plate having a light transmission domain and a display of a transmission type and a display of a reflection type being possible (instant specification, pages 2-4). Thus, it would have been obvious to a person of ordinary skill in the art to employ in Sakamoto's LCD device a vertically aligned type using n-type liquid crystal and the reflecting plate having a light transmission domain for obtaining a LCD device with high contrast and good visibility in bright and dark environments.

Claims 18 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 18 is allowed over the prior art of record because none of the prior art discloses or suggests a LCD device having the combination of the structure as recited

Art Unit: 2871

in claim 17 and the recited feature "*wherein at least any one of the signal wire, gate wire and storage capacitor is bent in a similar fashion as the structure*". Claim 19 is also allowed since it depends on claim 18.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jeon et al (US 6,954,244) disclose a reflection electrode including regions with different heights and widths.

Any inquiry concerning this communication should be directed to Tai Duong at telephone number (571) 272-2291.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


TOANTGN
PRIMARY EXAMINER

TD
TVD

12/05